Most utilities pay too much for programs and pass along the cost to consumers.

One hundred thousand homes in Entergy's service area are connected to a radio system that shuts off air conditioners for 15 minutes an hour during peak times. Entergy hopes to switch these homes to the hybrid fiber/coaxial network to close a troublesome security hole: Unscrupulous customers put metal buckets over the receivers to block the radio signals that shut off the air conditioners. But they still receive a standard discount offered to customers who install the radio device.

Entergy explored other network options, including isdn telephone line services (the acronymn stands for Integrated Services Digital Network). The point-to-point technology only allows Entergy to contact homes one at a time, and so did not provide anywhere near the real-time flexibility of the First Pacific Networks system. Simoneau said that to change prices over an isdn network, Entergy would have required eight hours just to connect to every subscriber, making isdn useless for real-time control and response.

Who will pay?

If the electrical industry decides to hop on the information highway, the toll is going to have to come out of someone's pocket. Ideally, such a program would be funded by the electric company through savings in its capital budgets. But some feel that such a system could turn into a form of utility welfare, in which the rich are taxed to pay for the poor.

"The problem with demand-side management is that because of regulatory policy those programs are only evaluated based on total cost, not based on who pays," said Johannes Pfeifenberger, a consultant at the Brattle Group in Cambridge, Mass. He suggested that the extra bandwidth in fiber networks constitutes a giveaway to the residential customer. "Why should industrial customers that have already paid for installation of demand-side controls pay for fiber to residential customers?"

Pfeifenberger also found that most utilities pay too much for demand-side management programs and pass along the cost to consumers. "A lot of environmental groups and regulators want energy saving stuff done by utilities," he said, adding that utilities carry out these reforms and then get more than they invested back through increased rates.

He cited the case of one utility, which implemented a comprehensive demand-side management program for some of the homes in its service region during 1992 at a cost of about $ 60 million. A rebate program paid out $ 57 million in compliance awards to customers who paid $ 3 million for the upgrades, but received $ 120 million in bill savings. The trouble with this rosy picture emerged when customers not participating in the program discovered that they had subsidized the $ 57 million in rebate through higher rates, yet they received no benefit.

This pile-driver approach to sinking a foundation into a new market, which is apt to upset many customers, is the legacy of the utilities' monopolistic past. In exchange for guarantees on level of service, electric companies have been granted free reign to go crusading into unmapped territory. The competitive

and customer- service-oriented world of the emerging information age will call for very different business skills.

"Utilities are very unsophisticated marketers; they want to penetrate the whole market within three years," Pfeifenberger said. "Some of these projections are more ambitious than the vcr or fax machine. You can only reach that size if the product is free. But car manufacturers don't promote cars by giving them away below cost. If the customer has a cash-flow problem, they offer financing."

Utilities are very unsophisticated marketers; they want to penetrate the whole market within three years.'

San Francisco-based utility PG&E, along with Microsoft Corp. and Tele-Communications Inc. in a test centered in Walnut Creek, Calif., are taking the view that the customer should pay for new energy management services.

"We are envisioning it will be target-marketed to customers that feel it will be valuable to them, and are willing to pay for it," said Steve Phillips, project manager for PG&E. "It may turn out that they don't value it at all, and then that will be that. We feel we can offer enough information through time-of-use rates and dsm demand-side management so that it will be valuable enough for them to have it "

PG&E already has a crude form of demand-side management implemented in homes. Between noon and 6 p.m. electricity rates are three times more expensive than the rest of the day. This draconian pricing strategy reduces demand during those peak hours. This may have set the stage for consumer acceptance of for-a-fee demand- sidemanagement. The new system will allow consumers to program their homes to turn off appliances during the expensive hours, which they cannot do today, and so save them money. Phillips said the customer interest in the service may also come from the fact that it will let people get up-to-the-minute information on their electricity bill. But we suspect the average consumer has much more pressing information needs.

The Electric interface

That old saw about ease of use that dominated the personal computer era is tossed around today by many players in the utilities networking world. Success depends upon ease of use, especially when consumers will have to pay for the service.

Microsoft will be creating a tv-based interface for demand-side management systems used in the Walnut Creek trial. The participants in the Walnut Creek test are gambling $ 6.2 million that consumers will appreciate using the service because it saves them time and money. About 30 homes will be connected to the system later this year, and another 1,000 to 2,000 homes will be added in the first half of 1995.

Utilities are going to be hard-pressed to make the case that programming the lights is easier than just turning them off.

Central and South West will be deploying a customer interface developed by defense contractor Raytheon. The device is about the size of a paperback book and can be plugged into any outlet in the house to provide several menus and

be capable of programming the home's air conditioning, electric heating unit or the lights. C&SW will also be able to program these appliances remotely from their headquarters. Moreover, it will allow CS&W to communicate with its customers, sending promotional messages that appear on the device's screen. For example, CS&W might send a special offer that said, "Summer is around the corner, we will send you $ 5 if you get your air conditioner tuned and send us the service slip."

We wonder if even the easiest user interface won't be perceived as just another ball to keep in the air while managing a busy home. The utilities following the Customer Shall Pay school of thought are going to be hard-pressed to make the case that programming the lights is easier than just turning them off. Nor will it be easy to convince consumers that they want to pay for the inconvenience. The strategy that will likely be more successful is the one in which the utility will reach into the home and turn appliances on and off, according to the consumer's willingness to pay for energy. It's a simpler model, based on the tried-and-true forces of the marketplace that also eliminates a mundane task and it is all the more compelling if it earns the consumer a freem ovie channel. That's a miracle of automation that won't be hard to sell.

GRAPHIC: Table

IAC-NUMBER: IAC 16291446

IAC-CLASS: Computer

LANGUAGE: ENGLISH

LOAD-DATE-MDC: November 16, 1994

ATTACHMENT 4

1ST STORY of Level 1 printed in FULL format.

The Energy Daily

January 4, 1995

LENGTH: 1294 words

HEADLINE: SEC OKs Southern's Telecommunications Venture

BYLINE: By Mary O'Driscoll

BODY:

The Securities and Exchange Commission last week approved Southern Company's plans to invest $179 million in a telecommunications company in a decision that appears to set the stage for a move away from the "functional relationship" test in the Public Utility Holding Company Act.

The decision--which some observers say presents a situation analogous to early Federal Energy Regulatory Commission decisions interpreting the Federal Power Act's "just and reasonable" rate standard to include market-based rates--came on the last business day of 1994.

And it came exactly one week after SEC issued a proposed rule to address the contentious Ohio Power court decision by applying the lower of market or cost prices to intra-system service, sales and construction contracts. The proposal does not address the dicey jurisdictional questions surrounding the Ohio Power decision and what happens if a regulatory board decides to disallow some or all of the costs associated with a transaction, but prohibits a subsidiary company of a registered holding company from performing any service or construction for, or selling any goods to, any associate company or entering into any contract to do so, at above-cost prices if the purchaser might be expected to obtain comparable goods, services or construction elsewhere at a lower price.

SEC's Southern decision allows the company to form a new subsidiary, Southern Communications Services Inc., to build, own and operate an 800 megahertz wireless digital communications system for Southern's operations, as well as for those of outside companies. While 80 percent of the capacity of the system ultimately could be used to serve those outside customers, less than $20 million of the $179 million invested will be used for transactions with outside customers, Southern says.

Under such transactions, PUHCA directs SEC to limit the non- utility interests of a registered holding company those that are "reasonably incidental, or economically necessary or appropriate" to utility operations. To the protest of some utilities, SEC and the courts have interpreted this to mean the non-utility operations of a registered company must be functionally related to its utility operations.

In the Southern Communications case, SEC said Southern had satisfied the functional relationship requirement--specifically, it noted that the $20 million investment for outside transactions is far below the 50 percent limit allowed for such deals and that those outside transactions would depend on a system that

will be implemented for the benefit of Southern's operations.

But the commission went further, noting that even the "plain meaning" of PUHCA--sans the "functionally related" test-- permits the Southern Communications investment.

"(T)he transactions would appear to be within the plain meaning of the statute..., the proposed communications activities are permitted as 'reasonably incidental, or economically necessary or appropriate' on a finding that they are 'necessary or appropriate in the public interests or for the protection of investors or consumers and not detrimental' to the proper functioning of the integrated public utility system," SEC said.

Southern will finance its investment in the new business with its own equity investment and capital advances, as well as with loans from both inside and outside the company. The services offered to outside customers would be for industrial, commercial and other retail and wholesale customers of the Southern operating companies, including interconnected utilities and federal, state and local public safety, law enforcement and emergency management governmental agencies as well as other agencies of the states of Georgia, Alabama, Mississippi and Florida.

Of the $179 million investment, $140 million would be used for infrastructure costs, $13 million for prepaid operations and maintenance and $26 million for working capital and frequency license acquisition costs.

The company said it will transfer five to 10 managerial employees and 25 engineering, technical and marketing employees from Southern Company Services to the new subsidiary. The service company will provide financial, accounting, data processing and internal auditing services to Southern Communications and personnel from the operating companies and of Southern Development and Investment Group Inc. also will provide services to the new subsidiary.

Southern Communications will provide its services to associate companies at the lower of cost or market value, and outside customers will be charged a monthly service fee in addition to a charge based on the actual use of the system. The company said that Southern Communications will bear the market risk of providing commercial communications services, and the operating companies will receive market rates at below cost regardless of outside demand for the services.

LANGUAGE: ENGLISH

LOAD-DATE: January 9, 1995

ATTACHMENT 5

1ST STORY of Level 1 printed in FULL format.

FORTNIGHTLY

September 15, 1994

SECTION: COURTS AND COMMISSIONS; Pg. 43

LENGTH: 1968 words

HEADLINE: Step by Step;
The SEC and registered holding companies slip past PUHCA toward telecommunications

BYLINE: By James W. Moeller; James W. Moeller is an attorney-advisor in the Office of Public Utility Regulation of the U.S. Securities and Exchange Commission in Washington, DC. The SEC, as a matter of policy, disclaims responsibility for any private publication or statement by any of its employees. The views expressed herein are those of the author and do not necessarily reflect the views of the Commission or of the author's colleagues upon the staff of the Commission.

BODY:

It is a sure bet that the electric utility industry will participate in the development of the National Information Infrastructure -- the so-called "information superhighway" -- to some degree. However, there appears to be no consensus on the extent to which the industry should become involved in telecommunications services in the near future.

Electric utilities that are not registered public utility holding companies under the Public Utility Holding Company Act of 1935 (PUHCA), which is administered by the U.S. Securities and Exchange Commission (SEC), largely are free to engage in telecommunications services without SEC regulation; electric utilities that are registered holding companies under PUHCA generally require an SEC order of approval. Under its current interpretation of PUHCA, the SEC has issued orders of approval that have authorized registered holding companies to engage in telecommunications services, but which have limited the extent of those services nonetheless.

The PUHCA Regime

PUHCA creates an extensive and complex regime for SEC regulation of registered utility holding companies. The purpose of the regime is to prevent a recurrence of the financial abuses for which registered holding companies and their public utility subsidiaries were notorious in the two decades prior to enactment of PUHCA.

In particular, section 11 of PUHCA requires registered holding companies to limit their activities and operations to single and "integrated" public utility systems, and to "such other businesses as are reasonably incidental, or economically necessary or appropriate, to the operations of such integrated" systems. With respect to electric utilities, an integrated public utility

system under PUHCA includes electric power generation, transmission, and distribution facilities and equipment that are interconnected or capable of interconnection, operate in a single interconnected and coordinated system, and are confined to a single area or region, the size of which will not impair "the advantages of localized management, efficient operation, and the effectiveness of regulation."

The formation by registered holding companies of nonutility subsidiaries is subject to section 9 of PUHCA, which prohibits the acquisition of securities and interests in other businesses except in accordance with section 10. This statute requires an SEC order of approval for a proposed acquisition of securities. Section 10 also provides, among other things, that a proposed acquisition of securities by a registered holding company shall not be approved by the SEC if it would be "detrimental to the carrying out of the [above-described] provisions" of section 11. Thus, although there is no per se prohibition under section 11 on nonutility subsidiaries, the law restricts the diversification of registered holding companies into nonutility subsidiaries, which would include telecommunications subsidiaries.

Registered holding companies that form nonutility subsidiaries to engage in telecommunications must get SEC approval. The SEC must find that the nonutility subsidiary is "reasonably incidental, or economically necessary or appropriate to the operation of" an integrated public utility system.

In practical terms, SEC precedent has interpreted section 11 to require a "functional relationship" between registered holding companies and their nonutility subsidiaries. In addition, the SEC has declared that nonutility subsidiaries should be subordinate to the utility subsidiaries of an integrated public utility system. Finally, the SEC has declared that nonutility subsidiaries should contribute to the activities and operations of the utility subsidiaries of an integrated public utility system and should not be devoted to independent ends.

In the past decade, the SEC has approved the formation or acquisition of numerous nonutility subsidiaries on certain conditions. These conditions were intended to ensure a "functional relationship" between those subsidiaries and the utility activities and operations of their registered holding companies. By imposing revenue limitations, the SEC has acted to confine the activities and operations of those subsidiaries to the geographical regions served by the electric utilities affiliated with their registered holding companies. It has done so by forcing nonutility subsidiaries to earn 50 percent of revenues from the same geographic region served by the holding company's traditional electric operating subsidiaries.

The 50-Percent Test: Energy and Financial Services

1986 Eastern Utilities Associates. SEC allows EUA to form a nonutility subsidiary for demand-side management (DSM) services. The subsidiary can operate outside New England only if such "outside" revenues never exceed DSM revenues from within New England.

1992 Entergy Corp. SEC allows Entergy to form a nonutility subsidiary to engage in DSM in the states served by utility subsidiaries within the Entergy integrated public utility system.

1994 Central & South West Corp. SEC refuses to waive the "50-percent" previously imposed on CSW Credit, a nonutility subsidiary, for processing accounts receivable for companies outside the CSW utility system. Citing several old orders under PUHCA § 11, the commission noted, "the failure . . . to establish that a majority of a [nonutility] business is conducted with affiliated utilities should establish a presumption that [its] primary purpose is not to further the [utility] operations of the holding company."

Telecommunications Subsidiaries Under PUHCA

In the past decade, the SEC has issued six orders of approval under PUHCA allowing registered holding companies with electric utility subsidiaries to form telecommunications subsidiaries to engage either in research and development (R&D) or sales and services. In each instance, the SEC concluded that the telecommunications subsidiary bore a "functional relationship" to the activities and operations of the utility subsidiaries of the registered holding company system. In those instances in which the telecommunications subsidiary engaged in sales and services, the SEC imposed the "50-percent" standard.

In addition, there is now before the SEC a request for an SEC order of approval for a telecommunications subsidiary. In 1993, the Southern ompany requested a SEC order of approval to form Southern Communications, a nonutility subsidiary, to manage and coordinate the telecommunications activities of the Southern system.

The SEC Approach

The SEC has issued three orders of approval for the formation or acquisition by registered holding companies of telecommunications subsidiaries to engage in R&D, and two orders of approval for the formation or acquisition by registered holding companies of telecommunications subsidiaries to engage in sales and services. With respect to the latter two orders of approval, the SEC imposed the "50-percent" standard. In the absence of legislation to amend PUHCA to authorize registered holding companies to engage in telecommunications services without limits, the SEC might be expected, consistent with its precedent, to continue to authorize telecommunications subsidiaries to engage in sales and services, but to limit the extent of their sales and services through the "50-percent" standard.

The proponents of unrestricted participation by the electric utility industry in the information super-highway presumably are critical of the "50-percent" standard. The standard might appeal, however, to those who believe utilities should move cautiously. The standard, of course, is based not on this belief but on the current SEC interpretation of Section 11 of PUHCA. Nonetheless, the "50-percent" standard appears to provide for a gradual approach to electric utility participation in the information superhighway, which the cautious camp presumably would advocate. Indeed, it ensures that the questionable diversification efforts of a decade ago will not be repeated to the same extent.

Before it enacts legislation to authorize registered holding companies to engage in telecommunications services without limits, perhaps Congress should look to the experience of American Electric Power Co., Central and South West Corp., and General Public Utilities. All three registered holding companies are

required to report to the SEC the revenues received from leases of fiber-optic cable to companies outside their integrated public utility systems. Should the SEC authorize Southern Communications to engage in telecommunications services, it might require that company to report its revenues from those services. Congress then could look to the experience of The Southern Company as well.

The 50-Percent Test: Telecom Subsidiaries

1984 The Southern Company. SEC approves acquisition of interest in Integrated Communications Systems Inc. (ICS), engaged in R&D for a two-way communications system over local telephone lines to offer DSM and energy-management services, as well applications for cable television and electronic mail.

1987 American Electric Power Co. SEC allows similar acquisition in ICS, explains that ICS systems "will create economies of scale and will further the successful commercialization of [the system]."

1988 American Electric Power Co. Four AEP subsidiaries gain SEC approval under PUHCA § 9 to lease to companies outside the AEP system up to one-half of fibers on fiber-optics cable they plan to install between Columbus, OH, and Roanoke, VA, for internal communications. SEC notes "significant ratepayer benefits will be obtained if they are permitted to lease [50 percent] until their internal needs require the use of same."

1991 Entergy Corp. SEC permits acquisition of interest in First Pacific Networks Inc. (FPN), engaged in R&D on a combined data, voice, and video communications system with DSM and other energy-management applications. SEC explains that system could "dramatically increase the exchange of information between a utility and its customers." (Entergy must sell its interest in FPN by January 1, 2002.)

1994 Central & South West Corp. SEC ok's formation of CSW Communications, a nonutility subsidiary, to lease about one-half of fibers on a planned internal fiber-optic cable to companies outside CSW system. SEC notes that new cable "will provide . . . infrastructure required for residential demand-side management.

1994 General Public Utilities. SEC allows three utility subsidiaries to lease one-half of fibers on internal communications fiber-optic cable to companies outside the GPU system. SEC observes that leases would not interfere with "primary and priority" use of cable by the subsidiaries, but orders annual reports on revenue they generate.

Registered holding companies already can be authorized under PUHCA to engage in telecommunications services, albeit under the "50-percent" standard. The failure to repeal the standard with legislation to authorize such services without limits might close the door to utility participation for good. Nonetheless, given the reputed record of the electric utility industry on previous diversification efforts, perhaps it would be prudent to judge the performance of registered holding companies under the "50-percent" standard before it is repealed.

Commissioner Richard Y Roberts, in a May congressional hearing on federal

regulation of registered holding companies, announced that the SEC would conduct a thorough assessment of the need to modernize PUHCA. To that end, the SEC sponsored a public roundtable discussion in July. A report on the assessment is expected in 1995. Perhaps it also would be prudent to review that report before the "50-percent" standard is repealed.

LANGUAGE: ENGLISH

ATTACHMENT 6

14TH STORY of Focus printed in FULL format.

Electric Utility Week's Demand-Side Report

February 3, 1994

SECTION: Pg. 1

LENGTH: 1359 words

HEADLINE: DSM POTENTIAL, NEW REVENUES LURE UTILITY INVESTMENT IN 'INFORMATION SUPERHIGHWAY'

BODY:

Recent announcements of significant investments by several utilities in residential fiber-optic and cable-based two-way communications networks that include a variety of demand-side management options indicate a growing confidence in the financial and technological promise of the "information superhighway."

Entergy Corp. has announced that it will invest $ 10-million to install the PowerView, "customer-controlled load management" (CCLM) system -- which will also carry non-utility consumer services -- in 10,000 homes by the end of 1995. Addressing the "DA/DSM '94" conference in Orlando, Fla., Jan. 17-20, Entergy's Michael Niggli, senior vice president marketing said "It's the largest commitment in this kind of infrastructure of any utility company today."

Entergy is also planning to risk its own money on the project and hopes to bypass the regulatory process. The utility has asked regulators in Arkansas and Louisiana to remove the PowerView project from its integrated resource plans, a move that would reduce the size of Entergy's proposed systemwide IRP by about 60%. "The company is extremely confident that the CCLM program will be successful and that our customers will benefit from its installation. Therefore, Entergy will accept the risk of the installation until such benefits are proven and will not seek to pass along installation costs to customers until customer benefits are proven and quantified," Niggli said (See story, page 13).

The Southern Company is also in the final stages of selecting sites for demonstration projects of the PowerView system in their four-state service territory. Last September, Southern announced that it would purchase between 3,500 and 8,500 PowerView units (DSR, 30 Sept '93, 1).

Pacific Gas & Electric has committed $ 6.2-million to a partnership with Microsoft Corp. and Tele-Communications Inc. to hook up 2,000 homes by early 1997 to a broadband fiber-optic telecommunications network that will deliver on-line energy monitoring, time-of-use pricing, billing information, residential lighting control, automatic meter-reading and outage sensing (DSR, 20 Jan, 3).

And Hydro-Quebec recently announced that it will join a group of fellow Canadian firms and the Hearst Corporation in forming "UBI"-Universality, Bidirectionality Interactivity -- a $ 200-million consortium to bring the "electronic highway" to 1.5-million homes in the Saguenay region, Quebec City and Montreal over the next three years, and to all of Quebec by 2002. Hydro-Quebec has a 20% share in the venture and will offer customer-controlled energy management services to existing cable subscribers. These customers, who account for 80% of homes in Quebec, will not pay extra for the system, which

will include magnetic card readers and receipt printers to account for purchases and financial transactions made through the system, according to Hydro-Quebec.

On the regulatory front, a Jan. 11 speech by Vice President Al Gore indicated that the Clinton administration would seek to lift regulatory restrictions on utilities seeking to speed development of the emerging National Information Infrastructure (NII). Federal legislation lifting many of these restrictions is expected to be proposed in Congress by Rick Boucher (D-Virginia) and Edward Markey (D-Mass.) (See story, Page 10)

Entergy, which teamed up with First Pacific Networks, Sunnyvale, Calif., believes utilities should want to be at the table early on, "shaping the information superhighway, not captive to it," according to Niggli. The company believes eventual extension of the system to include direct utility control of residential load through hookup of the system to individual appliances, coupled with real-time distribution-system monitoring, will yield flexible demand-side management resources that will more than offset utility investment. Getting in late will mean others will control access to the information highway, Entergy warns.

Entergy has also asked the regulatory jurisdictions of its operating companies "to permit time-of-day pricing for participants so customers can gain the lower costs of moving their usage to off-peak times." The CCLM system will also give Entergy "remote outage sensing" and automatic meter-reading capabilities.

PG&E, for its part, says energy management and other services offered through a fiber-optic and coaxial network will give customers "added value," which may give utilities the edge they will need to attract and retain customers in a retail wheeling climate. According to PG&E's Steve Phillips, director energy systems alternatives, a full range of energy services options offered through the information highway will strengthen customer loyalty, reduce utility costs and allow PG&E to pursue new energy markets for additional sources of revenue.

According to Hydro-Quebec, the combined benefits promised by the UBI system, which eventually may include electronic bill-paying, will be well worth the utility investment. Hydro-Quebec chairman Richard Drouin told Demand-Side Report once the UBI network comes on, customers will be able to use their television monitors for home automation and to control energy used by electric space heaters and hot-water heaters. The company also hopes to develop auxiliary technology that will facilitate "dual-energy systems."

But while direct residential load control, real-time pricing, automatic meter-reading and other capabilities will clearly benefit some utilities, many questions remain.

For one, while DSM is being touted as a way to leverage utility investment in the fiber-optic highway, most systems envisioned would include direct residential load control, with utility hookup to high-demand appliances, a feature that may be hard for many customers to accept. Today, residential cycling programs, many of which do not need fiber-optic technology to operate, currently account for only a small fraction of DSM in the United States.

In Orlando, Jan 18, Entergy's Niggli told Demand-Side Report that early indications from Little Rock showed participating customers had no problems with acceptance of the PowerView CCLM system. But direct utility load control has not been used as yet.

Clearly, utilities like Entergy are not relying solely on DSM prospects to turn profits through the fiber network. "Excess capacity" on PowerView will be used to offer other non-utility services to subscribers, Entergy says. Through its Entergy Enterprises subsidiary, the company plans to "aggressively" market its surplus capacity to "information providers, offering telephone, cable television, medical, educational, security, and multi-media services."

Another potential problem with early utility investment in the superhighway infrastructure, is the current lack of a common communication standard or protocol.

According to Hearst Corp., which owns 10% of UBI and will operate its electronic directory of services through which subscribers will access all services, deployment of the system in Quebec is made possible because of the universality of communication standards set by Videotron and its 1-million Canadian cable subscribers. "Videotron is able to set the technical standards for an important economic unit that will avoid the standards balkanization that will occur in the early years in the U.S.," predicted Alfred Sykes, president of the Hearst new media & technology division.

In fact, U.S. electric utilities, with thousands of miles of fiber already in place for distribution purposes, have not yet implemented a common standard for industry communications. (The Electric Power Research Institute is currently working to win international acceptance of its Inter-Control Center Communication Protocol, according to its newsletter, The UCA News.)

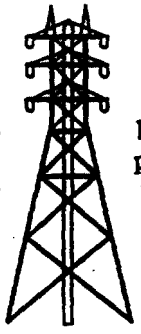
Finally, its is also unclear whether the range of service offered through fiber-optics, such as pay-per view television, home banking, electronic mail, home shopping, gambling (Loto-Quebec owns 12% of UBI), business directories, information databases, video games and more will achieve the "critical mass" necessary to gain widespread system acceptance

LANGUAGE: ENGLISH

LOAD-DATE-MDC: June 10, 1994

ATTACHMENT 7

UTILITY POWER



By MITCH SHAPIRO

If telcos are the 500-pound gorillas of the telecommunications industry, then electric utilities are a herd of one-ton elephants who, facing a drought on their traditional grazing lands, are casting hungry glances at the fertile field of communications.

Right now, the application that the utilities are focusing on is "demand side management" or DSM, which will enable customers to keep track of their household electrical use and make adjustments via an on-screen reading on their TV that will save them money. Eventually all of a home's appliances could be programmed at certain use levels—depending on time of day, season and customer lifestyles.

But in order to provide a full range of DSM services, utilities need access to a network that can support broadcast and point-to-point communications—and that's where cable comes in. Since the electric companies are realizing that the hybrid fiber/coax network is the way to go, utilities could become cable's powerful allies—or forceful enemies, by building their own network or partnering with cable's rivals.

Though no wholesale stampede of power companies onto cable's turf is imminent, ongoing changes within the utility industry suggest that communications will play an increasingly important role in its future. Regulatory trends favoring energy conservation and competition in power generation are forcing utilities to reduce costs, minimize investment in new power plants and improve customer service. Also, utilities are now increasingly at risk of losing some of their power generation business, so it could prove wise for them to investigate other energy-related services that they can provide.

DSM would seem to be a good bet, since it can reduce peak demand and, therefore, the need to build new plants, while helping to improve customer service.

The question is, will the utilities partner with cable, telcos, or seek to build their own networks to deliver these services into the home? At the moment, telcos' growing embrace of hybrid fiber/coax networks has increased the risk of utility-telco partnerships—a mammoth risk for cable since they'd represent the joining of two huge businesses.

On the other hand, should they become cable's allies, utilities' deep pockets could help operators deal with the painful combination of increased competition and renewed regulation. With an investment of roughly $6,000 per home already, utilities are far larger than the telephone and cable industries combined.

For instance, gross annual revenues for the electric utility industry in '93 totaled about $198 billion, versus about $90 billion for the local telephone companies and $25 billion for the cable industry. In terms of assets, Pacific Gas & Electric (PG&E), the country's largest investor-owned energy utility, has more than $27 billion versus Tele-Communications Inc.'s less than $8 billion. PG&E's $10.6 billion in annual revenues for '93 were about two-and-a-half times TCI's $4.2 billion.

Recognizing both the opportunity and risk, some cable companies are beginning to explore ways in which they can cooperate with utilities in deploying a DSM information superhighway.

TCI is leading the way. The nation's largest MSO early this year announced a joint trial in Walnut Creek, Calif., with Pacific Gas and Electric (PG&E). Also participating in the trial—expected to begin this year—is Microsoft, the computer software giant that hopes to extend

ILLUSTRATION BY KEN GRANNING

its dominance of the desktop PC to the TV set-top.

Alan Yates, Microsoft's business development manager for advanced consumer technologies, sees consumers eventually paying their utility bills and controlling the energy use of individual household appliances by "tuning into an energy management channel." He says Microsoft "views energy management as one of the key applications that brings major benefits to consumers from the superhighway."

Steven Phillips, PG&E's director of energy systems automation, sees the Walnut Creek trial as "a very important first step," in developing DSM hardware and software and "learning about customers' values."

Les Larsen, a consultant working with TCI, says the trial will seek answers to a broad range of technical, financial and marketing questions that will allow the three companies—all leaders in their respective industries—to create a model for future cooperation on a much broader scale.

TCI, with four other top MSOs—Comcast, Continental, Cox and Time Warner—are working to formulate a business structure for cable operators to work toward broader cable/utility cooperation, as well as industry involvement in PCS, video telephony and other new telecommunication services. Some are calling the initiative Broadband America.

Alex Best, Cox Cable's senior VP of engineering, says his company "has been talking with Entergy" about a possible joint trial in New Orleans and has had "similar conversations" with another utility, The Southern Company, about a possible trial in Pensacola, Fla. Though Cox is "interested in working with utility companies and trying to decide on equipment packages and contractual relationships, should we go forward," Best says discussions have yet to yield any agreements.

Some utilities—including the New Orleans-based Entergy Corp.—are looking into going their own way, at least at the moment. The investor-owned utility, which serves 1.7 million customers in three states, is conducting a 50-home DSM trial in Chenal Valley, Arkansas, using technology from First Pacific Networks (Entergy also owns a 10 percent stake in FPN).

Entergy had asked regulators for permission to build a hybrid fiber/coax network that would be paid for, in large part, by utility customers.

This proposal came under heavy fire from telcos and cable operators, who claimed it would lead to unfair cross-subsidization of a competitive network by utility customers. So, at least temporarily, Entergy said it would undertake a pilot deployment at shareholders' expense.

In terms of their impact, investor-owned utilities like Entergy are significant in that while they account for only 10 percent of utility companies, they service as much as 80 percent of utility customers. (Though some municipally or cooperatively owned utilities already operate cable TV systems, they're not considered a serious threat to cable since most of these are located in small, often rural, markets that cannot support separate power, telephone and cable companies.)

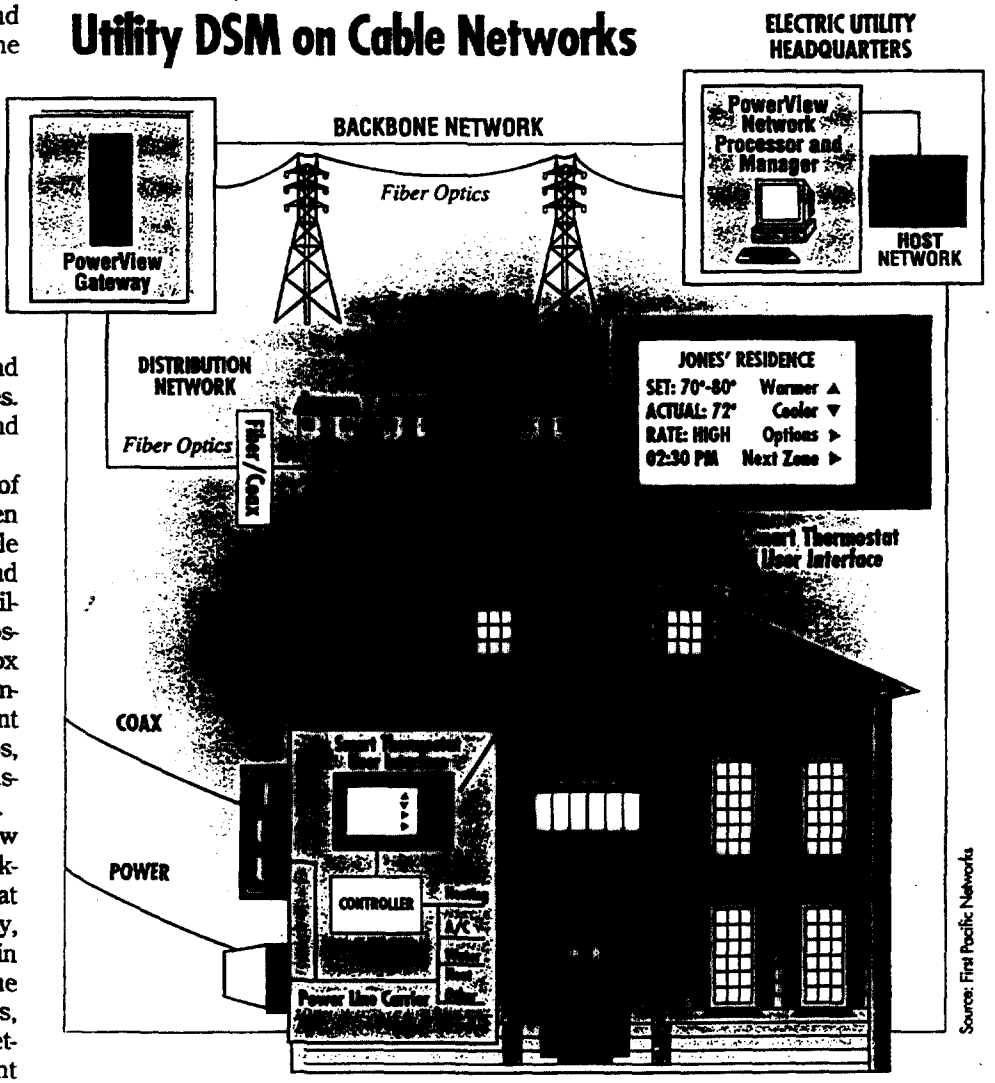
Entergy's VP of corporate communications, Charles Kelly, says its trial, which could include up to 10,000 customers over the next year, will provide the cost data regulators need to make fair and accurate decisions regarding cost allocations between regulated and unregulated services.

Kelly estimates that only about 5 percent of the network would be needed for DSM-related services. The rest, he says, would be available for other video, voice and data services.

"We don't necessarily want to get into the telecommunications or cable businesses," says Kelly. "But if it proves feasible, we think we should be able to." Utilities, he claims, would bring "unique expertise" and "increased competition" to the communications arena.

Two other utilities—The Southern Company and Central and Southwest

Utility DSM on Cable Networks



First Pacific is marketing a system that will allow Demand Side Management on a hybrid fiber/coax network.

Corp.—have also announced plans for DSM trial using technology from the Sunnyvale, Calif.-based First Pacific Networks.

While Central and Southwest is planning to build its own fiber/coax network (starting with a 2,500 unit trial in Laredo, Texas later this year), sources familiar with Southern's plans say it is likely to work out a deal with one or more cable operators.

Southern, which serves 3.5 million customers in the southeast and already owns an extensive fiber backbone network used by interexchange carriers, plans to purchase 3,500 FPN units for use in DSM trials during 1994-1995.

John Myers, Southern's director of architecture and network services believes "no doubt there will be more competition" in the telecommunications arena, but also sees "lots of opportunity [for cable, telephone and utility companies] to work together" in creating the information superhighway.

Myers, who appears to favor "a single integrated network," suggests that today's cable operators may end up playing a role more akin to HBO and that "some egos will have to change to accept that they don't own the infrastructure."

In spite of Myers' suggestion that cable operators might end up becoming program suppliers on utility-owned networks, Larsen, the consultant to TCI, believes that in most cases the opposite will be true—utilities will become service providers using networks owned by cable operators.

PG&E appears to agree with Larsen. Says PG&E's Phillips, "partnerships are the way" to bring DSM to the utility industry.

At this point, there's no telling whether—sometime in the future—utilities will be able to actually become program providers or have a major interest in program delivery. At the moment, government regulation, including state guidelines, restricts such involvement. Utilities, of course, don't have the expertise in that area, but if regulation opens the door, they could presumably buy the expertise the way telcos are doing by hiring talent.

Financing the Highway?

If the Walnut Creek trial can demonstrate that utilities have "a lot to gain through communicating with their customers and helping them manage energy," then utilities could become "extremely helpful in bringing the information superhighway to the public," says TCI director of business development John Bringenberg.

Of particular interest, says TCI consultant Larsen, is the roughly 40 percent of homes that don't subscribe to cable. If utility-related services can help justify the cost of deploying digital terminals to these homes, it could open the door to other services. For example, while these households may still prefer not to purchase subscription cable services, some could become regular or occasional users of such on-demand services such as pay-per-view movies.

Several utility industry sources cite studies suggesting that an investment of at least $400-$500 per home can be justified by cost savings associated with DSM.

The impending deployment of a DSM system by Amer... Corp., one of the nation's largest utilities, suggests that the value of DSM may be even higher.

According to Ray Spratlin, president of Integrated Communication Systems (ICS), the Atlanta-based supplier set to begin shipping the utility 25,000 DSM units this summer, the current price of his company's two-way DSM system, which combines FM sideband radio and telephone links, is in the $700-$800 per home price range. (Spratlin says the utilities he's talking with today are "very interested" in a version of his company's technology suited for fiber/coax networks.)

Should this kind of investment be shifted to cable-based DSM systems, it could go a long way toward financing construction of cable's information superhighway.

Cox is "interested in working with utility companies."

—Alex Best
Cox Cable

Recognizing the trend toward hybrid fiber/coax, Scientific-Atlanta is moving toward integrating its cable transmission products with the energy management products currently sold to utilities through its control systems division. Today, say company officials, the two units "are working together to provide capability for utility broadband trials."

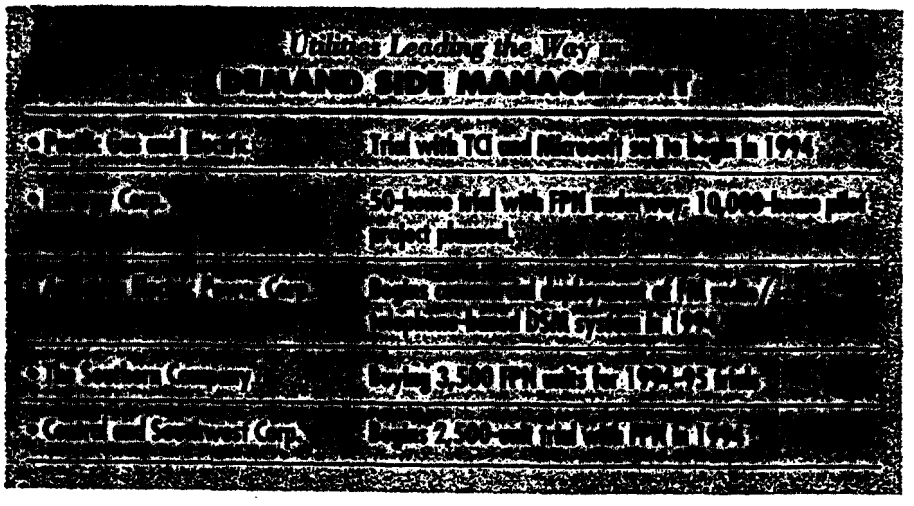
Cable vs. Telco

Though utilities as a whole have spent over $300 million installing 8,000 miles of fiber, the vast majority of this investment is in fiber backbone networks linking power stations. Relatively little fiber has been installed thus far in the distribution portion of utility networks.

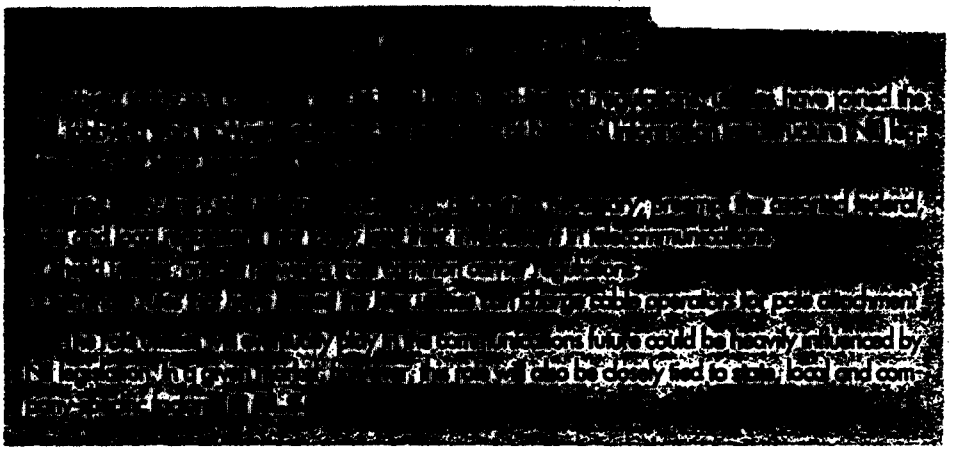
As utilities realize that their existing fiber investment "represents only a small fraction of what's needed" to provide DSM services, predicts Larsen, "a large percentage of the energy industry will choose to work with cable if operators can meet [utilities'] standards of reliability and performance" and demonstrate that they are the least cost provider of transport services.

And because most of their network costs will be underwritten by their core business, he predicts, cable operators will, in most cases, be the low-cost provider.

Even those utilities that want to build their own network, predicts Larsen, may be forced by "least cost" regulations to instead hitch a ride on existing networks.



UTILITY POWER



However, Rick Yee, manager of telecommunications at Houston Power and Light and chairman of a utility-industry Strategic Telecommunications Opportunities Task Force warns against discounting telcos as DSM network providers.

Noting that telcos have much higher penetration than cable operators and, often, a more heavily depreciated plant, Yee suggests that "accounting departments, not engineering departments [may] win" the battle for utilities' DSM business.

Yee says his company is considering "limited volume" trials, though he describes discussions with Houston's two largest cable operators—TCI and Time Warner—as "casual."

So if hybrid fiber/coax networks are the wave of the future in DSM, there's no guarantee utilities will decide to hitch a ride on cable's superhighway—with some telcos building their own fiber coax networks and some utilities possibly opting to build their own also.

In addition, cable-utility alliances themselves face a number of hurdles, says DSM consultant Paul Spaduzzi, a former ICS official. Cable operators will have to offer utilities "one stop shopping" in a given market, he says, as well as consistently high levels of reliability.

If one or more franchisee in a given market won't agree to a DSM deal or falls short of a utility's reliability standards, cable's chances to win utility business in that market could be in jeopardy. This is one scenario the Broadband America initiative, run by TCI, Comcast, Continental, Cox and Time Warner, hopes to avoid.

A third hurdle, says Spaduzzi, is to offer rates and services that are competitive with telephone and radio-based systems. The good news here, agree most experts, is that cable's hybrid fiber/coax networks appear well suited for cost-effective delivery of advanced DSM services.

Why DSM?

Regulatory trends favoring energy conservation and competition in power generation are pushing utilities toward "demand side management" or DSM as a way to reduce costs, minimize investment in new power plants and improve customer service. DSM can reduce peak demand and the need to build new plants, while helping to improve customer service.

The value of DSM for utilities is tied in large measure to the fact that their generating capacity must be built to satisfy peak demand. According to DSM consultant Paul Spaduzzi, roughly 20-30 percent of a typical power company's capacity is dedicated to serving peak-use periods, which occur only 1-5 percent of the time.

If these peak levels can be reduced by shifting some peak usage to off-peak periods, a utility might be able to avoid building a multibillion dollar plant that its ratepayers would otherwise have to pay for through higher rates.

One way to do this is to offer lower rates during off-peak periods and to charge higher rates during peak periods.

The importance of this change in the utility industry for cable operators is that sophisticated DSM systems require cost-effective communications between utilities and their customers.

And there could be an important benefit for the utilites, which are at risk of losing some of their power generation business. California, a state where Pacific Gas & Electric is a major supplier, has set a plan toward opening the power generation market to competition—beginning initially with business customers and, by the end of the decade, also residential users. It's thought that in the future, such increased competition in power generation could enable customers throughout the country to eventually be able to choose their own power source—an idea that is driving some utilities to develop new sources of revenue, including DSM. ■ **M.S.**

Whoever they ally with—if they do—utility companies offer important advantages, aside from their cash resources, to those building networks. They control extensive rights-of-way and, aside from having installed fiber backbones that link their offices, power plants and sub-stations, they also, in some cases, operate competitive access provider (CAP) subsidiaries, or lease excess capacity on their fiber nets to other CAPS and interexchange carriers (IXCs).

While the future role of utilities in communications has yet to be determined, given what is at stake, TCI's Bringenberg thinks cable companies should reach out to the utilities in their service areas.

"You should be talking to electric utilities," Bringenberg told operators during a panel dealing with new revenue streams at the National Show last month in New Orleans. CV

ATTACHMENT 8

5TH STORY of Focus printed in FULL format.

PR Newswire

January 19, 1994

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HEADLINE: ENTERGY ANNOUNCES A MAJOR DEVELOPMENT IN ITS RESIDENTIAL CUSTOMER-CONTROLLED LOAD MANAGEMENT PROGRAM

BODY:

NEW ORLEANS, Jan. 19 /PRNewswire/ -- Entergy Corporation (NYSE: ETR) announced plans today to launch, at its own expense, an initial deployment of its customer-controlled load management (CCLM) program in up to 10,000 homes in areas served by its electric operating companies.

CCLM is an interactive demand-side management energy system representing Entergy's participation in the development of what has been termed the National Information Superhighway. According to Mike Niggli, senior vice president of Marketing for Entergy: "The company is extremely confident that the CCLM program will be successful and that our customers will benefit from its installation. Therefore, Entergy will accept the risk of the installation until such benefits are proven and will not seek to pass along installation costs to customers until customer benefits are proven and quantified.

"Further, we are confident," Niggli added, "That the use of this type of technology by the electric utility industry provides the economic justification for development of the information superhighway."

The CCLM program utilizes a fiber optic/coaxial cable infrastructure and PowerView(TM) (an innovative telecommunications application) to enable customers to control their energy use and shift electricity consumption away from peak demand periods when power is more expensive. Customers using CCLM and PowerView(TM) can program appliances to shift electric usage to off-peak times, thereby reducing home utility bills and helping the utility avoid or delay the future construction of expensive power plants. The CCLM system can also provide itemized bills, pricing signals by time-of-day, remote on/off capabilities, remote outage notification, and automated meter reading among other utility operational services. Entergy will ask the regulatory jurisdictions of its operating companies to permit time-of-day pricing for participants so customers can gain the lower costs of moving their usage to off-peak times.

Entergy currently has a 50-home CCLM pilot program underway in Little Rock, Ark. Participation in the accelerated and expanded implementation in other areas of the Entergy System will be voluntary. Preliminary research indicates that residential customers who use over 6,000 kwh per year are likely to benefit from the options CCLM and PowerView(TM) give them. Over half of Entergy's residential customers have usage patterns of this amount

PowerView(TM) uses the full speed of the fiber optic system, but only a portion of its capacity. Entergy, through its subsidiary Entergy Enterprises, will investigate the possible use of this surplus capacity by other

information providers offering telephone, cable television, medical, educational, security, and multi-media services.

"Entergy plans on aggressively pursuing use of the surplus capacity in the PowerView(TM) system for the benefit of its customers and shareholders. New customer service improvements are being discovered each day and additional services, like those already available in the Arkansas pilot project, will be available in our expanded deployment," said Jack King, president of Entergy Enterprises.

"Once we have the results of this program we can then come back to regulators with more precise information regarding costs. That is," Niggli said, "which charges should go to the customers and which to other users of the System."

Niggli said that Entergy has committed up to $ 10 million to this initial deployment. This first step will tell Entergy whether the next step should be an expansion of the project or full scale implementation of the program throughout Entergy's service area.

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/CONTACT: Media: Patrick Sweeney of Entergy, 504-569-4160

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